Customer Care Solutions
DTX-3 Series Transceivers

Modules

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Glossary of Terms

ACCIf	Accessory Interface block of MAD2WD1
AIF	Application Interface
ASIC	Application Specific Integrated Circuit
BB	Baseband
CCONT	Power management IC for digital phones
CIS	PCMCIA Card Information Structure
COBBA_GJP	DCT3 RF-interface and audio codec ASIC with serial MAD interface
CSP	Chip Scale Package
DB	Dual band
DCS1800	Digital Cellular system at 1800 MHz
DCT3	Digital Core Technology, 3rd generation
DSP	Digital Signal Processor
EMC	Electromagnetic compatibility
EMI	Electromagnetic Interference
FBUS	Asynchronous Full Duplex Serial Bus
GSM	Global System for Mobile communications
HSCSD	High Speed Circuit Switched Data
MBUS	1-wire half duplex serial bus
MCU	Micro Controller Unit
MDI	MCU-DSP Interface
MAD	**M**CU+**A**SIC+**D**SP asic, common name for whole family
MAD2PR1	Modified MAD2 asic, pin count 144 instead of 176
MAD2WD1	**M**CU+**A**SIC+**D**SP with HSCSD specific changes

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PA	Transmit Power Amplifier
PBX	Private Branch Exchange
PC	Personal Computer
PWB	Printed Wiring Board
PCM	Pulse Code Modulation
PCM SIO	Synchronous serial bus for PCM audio transferring
PCMCIA	PC Memory Card International Association
PSTN	Public Switched Telephone Network
RF	Radio Frequency
SIM	Subscriber Identity Module
SMART	PCMCIA interface ASIC
Sulo	PCMCIA interface ASIC for RPM-3
UI	User Interface
VCXO	Voltage Controlled Crystal Oscillator
VCTCXO	Voltage Controlled Temperature Compensated Crystal Oscillator.

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Functional Description of DTX-3

Circuit Description

The DTX-3 application module connects the TME-3/TME-4 with the fixed telephone network and/or with any unmanned connection, e.g. telemetry, remote control, security systems, remote data retrieval.

The Data module baseband blocks provide the MCU, DSP, external memory interface and digital control functions in the UPP ASIC . Power supply circuitry, charging, audio processing and RF control hardware are in the UEM ASIC.

The purpose of the RF block is to receive and demodulate the radio frequency signal from the base station and to transmit a modulated RF signal to the base station.

Product and Module List

Name of module	Type code	Material code	Notes
Application module	DTX-3	0630596	
Transceiver	TME-3	0600344	
Assembly parts	A-cover B-cover	9458825 9458911	Assembly parts must be ordered as separate spare parts
Transceiver	TME-4	0600342	

Interfaces and Connectors

Telephone interface /PBX Trunk interface:

Signals	Value
High Impedance Mode	50V
Ringing Voltage	70VAC
Line Impedance	600 Ω

Telephone interface /PBX Extension interface:

Signals	Value
Off-Hook AC impedance	600 Ω
On-Hook AC impedance	150k Ω
On-Hook DC resistance	10M Ω
Loop DC current	Min. 15 mA, max. 120mA

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Connector Name
RJ-11 Trunk/Extension Connector
M2M System Connector
RS232 connector
Power connector
Antenna connector

RJ-11 Trunk/Extension Connectors

This interface is a standard analog 2-wire interface for analog PBX trunk or analog land-line telephone, or for analog PBX extension.

M2M System Connector

Custom pin header 2x25 for connection between GSM and PBX Application module.

RS 232 Data Connector

D9 female connector for standard level RS 232 data.

Power Supply Connector

Connector for ACW-5B power supply.

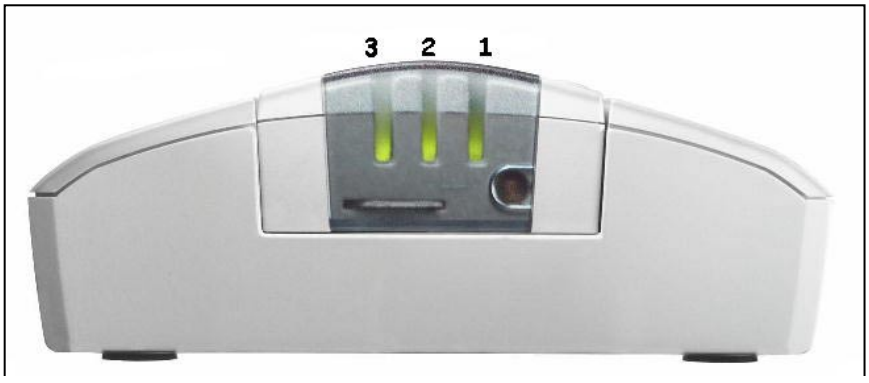
Antenna connector

TME-3 external antenna connector.

Nokia 32 LED Indicators

TME-3 comprises three indicator LEDs:

Figure 1: Indicator LEDs



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LED Indicator status:

Table 1: Nokia 32 LED indicator status during start-up

LED 1	LED 2	LED 3	Description	
-	-	-	Power off	
Green scan	Green scan	Green scan	Power on, connecting to network	
-	Red blink	-	PIN query/ new PIN query	
-	Red blink	Red blink	PUK query	
			Intensity of Field Strength	
Red blink	-	-	Unacceptable	<- 105 dBm
Green blink	-	-		-105 ... -100 dBm
Green			Weak	-100 ... -95 dBm
Green	Green blink			-95 ... -90 dBm
Green	Green		Moderate	-90 ... -85 dBm
Green	Green	Green blink		-85 ... -80 dBm
Green	Green	Green	Good	>-80 dBm

Table 2: Nokia 32 LED indicator status during normal operation

LED 1	LED 2	LED 3	Description
	Green	Green	In service, trunk mode
Green		Green	In service, extension mode
*	*	Green blink	Call on
*	*	Green blink	Incoming call
*	*	Green/Red blink	Message received/ Voice mail in box
*	*	Red blink	Message storage full

*) Led state due to current mode (trunk/extension) of the Nokia 32 terminal

Table 3: Nokia 32 LED indicator status in special situations

LED 1	LED 2	LED 3	Description
Green/Red blink	Green/Red blink	Green/Red blink	Insert SIM card
Red blink	Red blink	Red blink	Failure, contact service
Yellow	Yellow	Yellow	Initialising

"SMS message received" signal will be resetted by off-hook, which also clears the message from the message box.

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Signal tones

Tone sequence	Description
- - - - - - - - - - - - - - - - - -	Insert SIM card
- _ _ - _ _ - _ _	Enter PIN code
_ _ _____ _____	Enter PUK code
- - - -	Error tone ()
_____ _____	Ok
-- -- -- -- -- --	SMS received

Key Sequences

These sequences have to be entered using a normal landline telephone set connected to the trunk connector of Nokia 32

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Table 4: Nokia 32 button sequences used in trunk mode.

Sequence	Functionality	Response
PIN#	PIN code input	Tone
PUK#	PUK code input	Tone
0**value	Volume control, louder. 'Value' from 1 to 10.	Tone
555**#	System reset	Tone
	CONFIGURATION STATE	
####	Configuration state	Tone / Light indication
	Acces code query state	PIN Query tone and light
1234#	Acces code enter. Default acces code. Acces code can be changed or query can be disabled	Tone / Light indication
2**XXXX#	XXXX = interruption time in milliseconds. XXXX= 0 = LI disabled. Default 400ms. Back to configuration state	Tone / Light indication
3**XXXX#	XXXX = Reversal time in milliseconds (999 => polarity reversed whole call time)	Tone / Light indication
4#	Entry code to CLI mode changing	Query state flashing
4**XXX#	XXX= 000 = ETSI FSK (default) 001 = DTMF 010 = DTMF_DK 111 = None	Tone / Light indication
5#	Entry code to operator selection. If roaming user can select the operator entering operator code. If 000 operator will be selected automatically.	Query state flashing
5**XXX#	XXX = operator number 000 = default (automatic selection)	Network searching. Tone and light indication about the succes.
5#	Entry code to ...	
444*OLD PIN*NEW PIN#	Change PIN code	Tone / Light indication
888*OPERATOR CODE#	Change Operator if roaming	Tone / Light indication

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